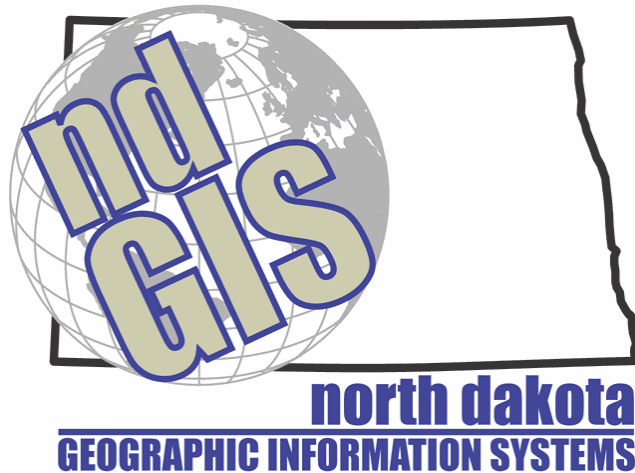


**North Dakota GIS Initiative Report
To Governor John Hoeven**

July 1, 2005 – June 30, 2006



Executive Order 2001-06: “The committee shall issue a report to the Governor's office at the end of each fiscal year, detailing progress, and problems encountered with GIS development in the state.”

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Executive Summary

The North Dakota Geographic Information System (GIS) initiative continued to grow during the July 1, 2005 – June 30, 2006 reporting period. The GIS Technical Committee (GISTC) continues to enhance the GIS Hub by adding data and applications and increasing awareness of the Hub by promoting its use, value and functionality. These efforts continue to pay off as indicated by the usage of the GIS Hub. There is an average of 35-40 daily concurrent connections to the GIS Hub database from state agencies. The web applications average almost 70,000 hits per month compared to an average of 50,000 hits during the previous report period. April 2006 was a record-setting month for the GIS Hub web applications with over 102,000 hits. Data downloads average over 2,800 per month.

There are approximately 180 layers on the GIS Hub. At the end of June 2006 these layers consumed approximately 2,285 gigabytes of storage compared to about 1,350 gigabytes in June of 2005. New data that have been loaded onto the GIS Hub over the past year include: High-resolution aerial photography in the Bismarck-Mandan area, high-resolution aerial photography for Cass County and in the Fargo area, statewide elevation data from the National Geographic Society. Updated data sets include transportation, city boundary, and statewide color aerial photography data. The GIS Hub also contains agency-specific data that is maintained and used internally by those agencies.

The GIS Hub, which is hosted within the State Information Technology Department's infrastructure, is the foundation of GIS work at the state agency level. Although the GIS Hub serves state agencies as a first priority, other levels of government and citizens also benefit from the GIS Hub. Agencies can utilize the GIS Hub infrastructure for applications to be used internally or provided to their constituents, saving them from having to build their own duplicated infrastructure. With the GIS Hub, data is available through several standardized interfaces and in a seamless and common format. The GISTC is the key factor in promoting new and updated GIS Hub data which is important to existing, new, and planned GIS Hub applications.

Major accomplishments include:

- Release of the GIS Initiative Strategic Plan which identifies the goals and objectives for the GIS Initiative for the current biennium and for the 2007-2009 Biennium.
- Development of the GIS Professional Services Contract Pool which has a primary benefit of making the procurement of GIS professional services more efficient by leveraging the master contract terms which have already been negotiated with the awarded vendors.
- Adding the Land Department and the Public Services Commission as Associate Members to the GISTC. The addition of these two members reflects the expanding use of GIS within state government

Looking to the future, the GISTC will continue to grow the GIS Hub with additional data, functionality and applications while supporting its increasing use. Entering into the 2007 Legislative Session, the GISTC will be asking for additional funds to support an increase in data storage needs and GIS Hub development and maintenance.

Accomplishment Highlights and Details

New GIS Hub Applications

- **Department of Agriculture:** An interactive map that can be used to assist pesticide applicators in determining the potential of pesticides to contaminate the groundwater at a specific area
- **Department of Health:** For internal use, an interactive map that displays facilities that are monitored by this agency
- **Department of Emergency Services:** Rangeland Fire Index map displaying fire danger by county
- **Department of Transportation:** An interactive map showing statewide transportation information and another interactive map used mostly by DOT employees and contractors to quickly produce maps at a pre-defined scale.
- **Web Map Services:** Used by the U.S. Geological Survey, U.S. Army Corps of Engineers, and other organizations. These web map services “stream” GIS Hub data over the Internet.

Updated GIS Hub Applications

- **Department of Commerce:** An interactive map used by businesses considering relocation to North Dakota
- **Tax Department:** An interactive map for identifying local sales and use tax rates using a city or address lookup
- **Game and Fish Department:** For internal and external use, interactive maps that displays Private Lands Open to Sportsmen (PLOTS) lands, game management units, boat ramps, fish stocking locations, and lake contour maps

New Data

- Bismarck-Mandan area high-resolution color aerial photography
- Fargo area high-resolution color aerial photography
- Cass County high-resolution color aerial photography
- National Geographic Society elevation data

Updated Data

- The configuration of near-surface aquifers is currently being updated, replacing data that is nearly 30 years old. Once verified by the State Water Commission this data will be placed onto the GIS Hub for data distribution.
- Color aerial photography obtained from the Natural Resources Conservation Service (NRCS) continues to be wildly popular. This data, which covers the entire state, is updated on an annual basis.
- Collaborating with the U.S. Geological Survey, high-resolution water features have been digitized and will be placed onto the GIS Hub for distribution.

- Watershed boundaries continue to be updated and as they are approved, placed onto the GIS Hub for distribution.

Strategic Plan

- The North Dakota GIS Technical Committee (GISTC) plans to use the Strategic Plan as a method to communicate our vision and the supporting goals and objectives within the existing and forthcoming Biennium.
- The following goals have been identified by the GISTC to implement its vision and achieve its mission; they are listed in order of importance. More information on these goals and other information can be found in the Strategic Plan which is available at <http://www.nd.gov/gis/about/plan/>.
 - Goal 1 – Continued enhancement and development of GIS data.
 - Goal 2 – Improved statewide GIS coordination.
 - Goal 3 – Outreach GIS.
 - Goal 4 – Promote GIS training.
 - Goal 5 – Improved GIS Standards.
 - Goal 6 – Improved GIS data distribution.
 - Goal 7 – Implement greater levels of open source GIS.
 - Goal 8 – Promote view of geographic information as critical information asset.
 - Goal 9 – Improved reliability and access of GIS Hub systems.

GIS Professional Services Contract Pool

- Effective July 1, 2006, several categories of GIS professional services have been added to the North Dakota State Term Contract 095. The North Dakota GIS Technical Committee, working in cooperation with the Information Technology Department and the Office of Management and Budget, State Procurement Office awarded contracts to GIS vendors in the following professional service categories:
 - GIS Project Manager
 - GIS Business Analyst
 - GIS Programmer/Analyst
 - GIS Analyst/Technician
 - GIS Data Services Specialist
 - GIS Web Designer
 - GIS Training
- State and local government agencies may use a structured work order request process to obtain GIS professional services through this contract.

Training and Education

- The 2005 North Dakota GIS Users Conference was a great success with approximately 120 registered attendees. For the first time in its history the conference was held in a hotel facility. The theme was "Strategic Thinking" with a focus on emergency management, data sharing and distribution, industry trends, and education. Attendees

were from state agencies, local government, the business sector including utilities, tribal, and federal agencies.

- Coordinated GIS training continues with utilization of the DOT training facilities. Since its inception in 2002, state agencies have collectively saved over \$65,000 in training costs alone. This amount does not include other people from federal and local government who have also participated in this training. Without this coordinated GIS training, state agencies would have to send their people out of state at greater expense and time away from their office and families.
- The GIS program for getting GIS into North Dakota K-12 schools and community colleges continues to be successful. Training for the educators occurs during the summer with the latest class being planned for August 2006. As previously reported, the North Dakota Career and Technical Education Department made arrangements with Environmental Systems Research Institute (ESRI) to provide free GIS software to all K-12 public and private schools in North Dakota, including ten North Dakota colleges.

Other Activities

- The GIS web site has been given a new look with enhanced navigation and modifications to the color scheme.
- The GIS Hub web services were featured as the “Web Site of the Month” in the December 2005 Open Geospatial Consortium newsletter.
- Enhanced security is now available for internal GIS Hub web applications.
- The GISTC, through the GIS Coordinator, continues to be part of nation-wide efforts that will greatly benefit North Dakota such as the “Imagery for the Nation” proposal. This nationwide aerial imagery program will collect and disseminate aerial photography on an established schedule using input from state coordinating councils such as the GISTC. Aerial photography is a fundamental base layer that is used by nearly all GIS professionals and applications.

Challenges

Data Acquisition Through Partnerships

- The GISTC and the State Mapping Advisory Committee (SMAC) will continue working to identify data needs and priorities.
- The GISTC continues to become more active in data development and collaboration and will work to identify new funding partners.

Data: Road Centerlines

- Although there are other priority data sets, the most important is a roads dataset. Spatially accurate centerlines with consistent and accurate attributes for county and city roads throughout the state do not exist.
- Road information is needed for day-to-day needs of agencies using GIS and is necessary for E-911 systems.

- The GISTC will be conducting a pilot study to determine the feasibility of using best available data sources to create a statewide data set.

Streamlined GIS Activities

- As noted in the 2005 GIS Initiative Report, a state-wide GIS strategy should be developed that encompasses state agencies, counties, cities, tribal, and higher education to maximize the benefits offered by the Hub. Although an annual meeting provides a communication tool, much more needs to be done to streamline statewide GIS activities.
- Statewide county GIS coordination needs to be improved. Recent discussions with the North Dakota Association of Counties may greatly facilitate assisting both “have” and “have-not” counties with their GIS needs.

Funding

- Additional 2007-2009 funds will be requested for:
 - Data storage: additional storage will be needed for new data sets
 - Hosting fees: application and server hosting fees are projected to increase
 - Application: development of new tools and maintenance of existing ones
 - Data: working with funding partners, these are funds used to develop data